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Sound Signal Meta-Data ~ 124

Classifier ~ 122

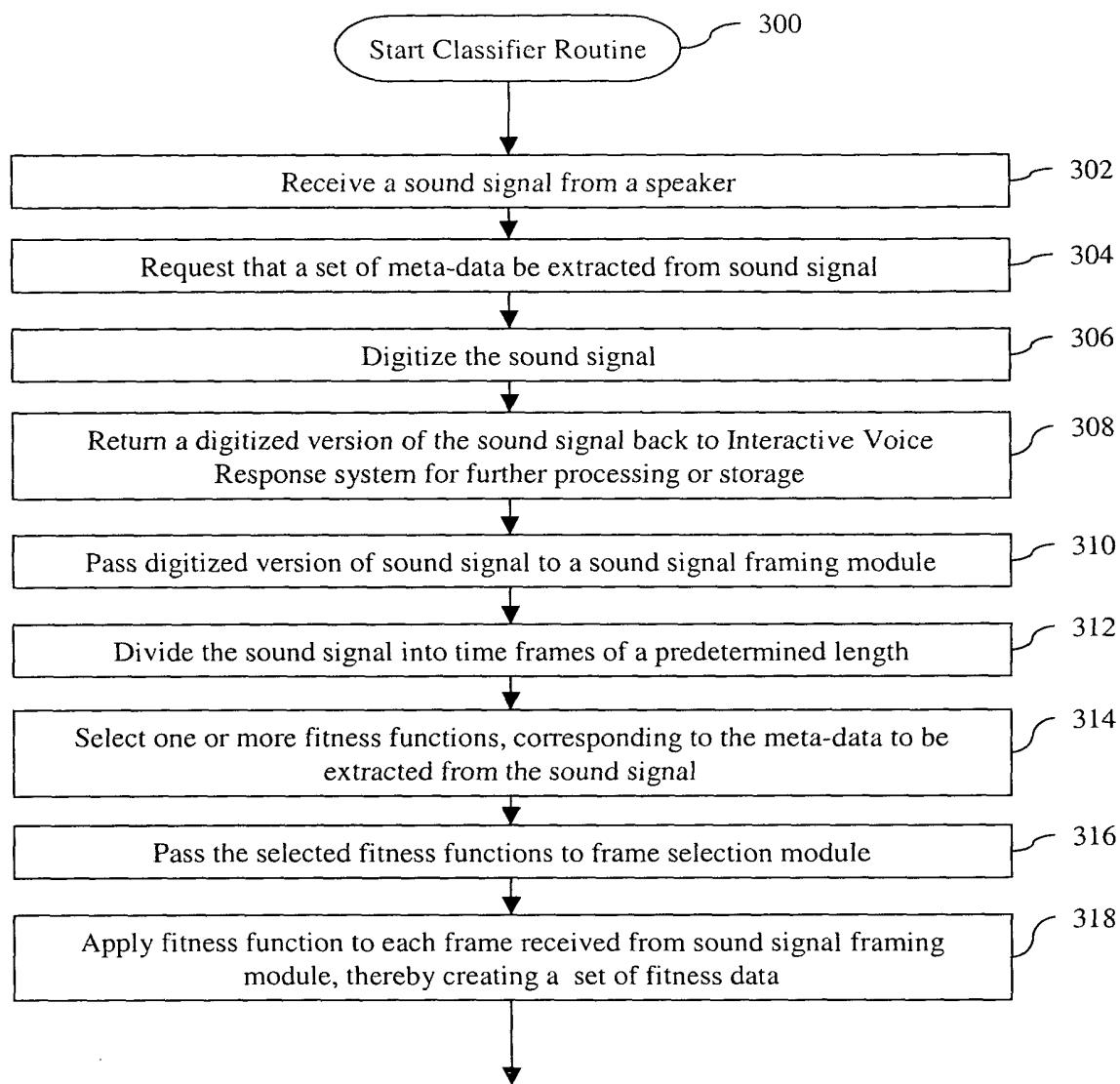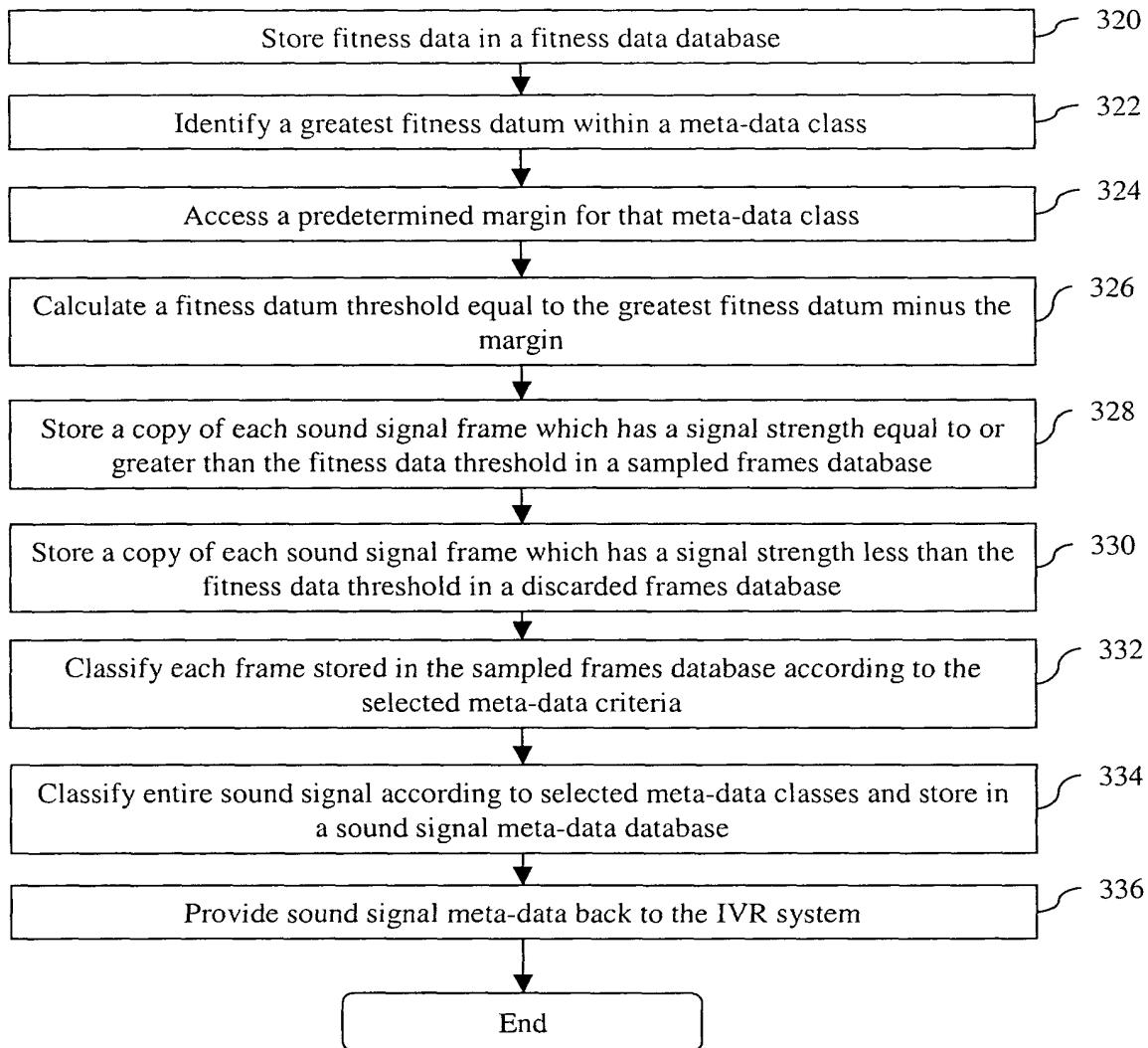**Fig. 1**

200

Fitness Data

Frame Number	Meta-Data Class #1	Meta-Data Class #2	•••	Meta-Data Class #n
1	8.5			
2	7.0			
3	9.6			
4	11.0			
5	12.0			
6	5.0			
7	4.0			
8	2.0			
9	1.0			
10	1.0			

Fig. 2

$\overbrace{\qquad\qquad}^{300}$

(Start Classifier Routine)

Receive a sound signal from a speaker — 302

Request that a set of meta-data be extracted from sound signal — 304

Digitize the sound signal — 306

Return a digitized version of the sound signal back to Interactive Voice Response system for further processing or storage — 308

Pass digitized version of sound signal to a sound signal framing module — 310

Divide the sound signal into time frames of a predetermined length — 312

Select one or more fitness functions, corresponding to the meta-data to be extracted from the sound signal — 314

Pass the selected fitness functions to frame selection module — 316

Apply fitness function to each frame received from sound signal framing module, thereby creating a set of fitness data — 318

Fig. 3A

```
┌──────────────────────────────────────────────────────────────────┐
│           Store fitness data in a fitness data database            │── 320
└──────────────────────────────────────────────────────────────────┘
                                  │
                                  ▼
┌──────────────────────────────────────────────────────────────────┐
│         Identify a greatest fitness datum within a meta-data class  │── 322
└──────────────────────────────────────────────────────────────────┘
                                  │
                                  ▼
┌──────────────────────────────────────────────────────────────────┐
│            Access a predetermined margin for that meta-data class   │── 324
└──────────────────────────────────────────────────────────────────┘
                                  │
                                  ▼
┌──────────────────────────────────────────────────────────────────┐
│ Calculate a fitness datum threshold equal to the greatest fitness datum minus the │── 326
│                                margin                              │
└──────────────────────────────────────────────────────────────────┘
                                  │
                                  ▼
┌──────────────────────────────────────────────────────────────────┐
│ Store a copy of each sound signal frame which has a signal strength equal to or │── 328
│   greater than the fitness data threshold in a sampled frames database │
└──────────────────────────────────────────────────────────────────┘
                                  │
                                  ▼
┌──────────────────────────────────────────────────────────────────┐
│ Store a copy of each sound signal frame which has a signal strength less than the │── 330
│        fitness data threshold in a discarded frames database      │
└──────────────────────────────────────────────────────────────────┘
                                  │
                                  ▼
┌──────────────────────────────────────────────────────────────────┐
│ Classify each frame stored in the sampled frames database according to the │── 332
│                      selected meta-data criteria                  │
└──────────────────────────────────────────────────────────────────┘
                                  │
                                  ▼
┌──────────────────────────────────────────────────────────────────┐
│ Classify entire sound signal according to selected meta-data classes and store in │── 334
│                 a sound signal meta-data database                 │
└──────────────────────────────────────────────────────────────────┘
                                  │
                                  ▼
┌──────────────────────────────────────────────────────────────────┐
│         Provide sound signal meta-data back to the IVR system      │── 336
└──────────────────────────────────────────────────────────────────┘
                                  │
                                  ▼
                         ╭──────────────────╮
                         │       End        │
                         ╰──────────────────╯
```

Fig. 3B